

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A process for reducing a fluorescence quenching caused by a measuring medium, in a fluorescence assay for an analyte using at least one fluorescent label comprising introducing a fluorescent conjugate comprising an oligonucleotide bonded to a rare earth metal cryptate into the measuring medium, thereby reducing the fluorescence quenching caused by the measuring medium and wherein the fluorescent conjugate is bonded covalently to one member of a pair of molecules that specifically bind to one another constructing a signaling molecule by labeling a biological molecule, which can bind to a targeted partner, comprising covalently bonding to the biological molecule a labeling agent which is a fluorescent conjugate comprising an oligonucleotide covalently bonded to a rare-earth metal cryptate.
2. (Previously Presented) The process as claimed in claim 1, wherein the oligonucleotide consists of a chain of ribonucleotide or deoxyribonucleotide units bonded to one another via phosphodiester bonds.
3. (Previously Presented) The process as claimed in claim 1, wherein the oligonucleotide consists of a chain of ribonucleotide or deoxyribonucleotide units or of analogous units of nucleotides modified on the sugar or on the base and bonded to one another via natural phosphodiester internucleotide bonds, some of the internucleotide bonds optionally being replaced with phosphonate, phosphoramidate or phosphorothioate bonds.
4. (Previously Presented) The process as claimed in claim 1, wherein the oligonucleotide consists of a chain comprising both ribonucleotide or deoxyribonucleotide units bonded to one another via phosphodiester bonds and analogous units of nucleosides bonded to one another via amide bonds.

5. (Previously Presented) The process as claimed in claim 1, wherein the oligonucleotide consists of ribonucleotide or deoxyribonucleotide units, one of which may comprise a functional group of NH₂, COOH, CHO, OH, SH, halide, sulfonate, epoxide, or maleimide, introduced onto or generated on said unit, or the functional group introduced using a spacer arm bonded to the terminal phosphate group in the 3' or 5' position.

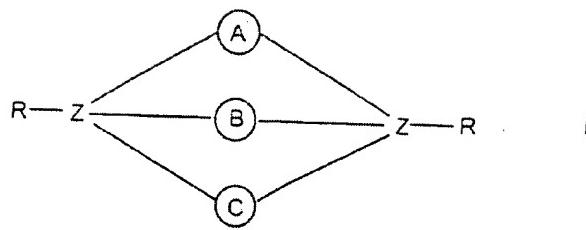
6. (Previously Presented) The process as claimed in claim 5, wherein said unit is the 5' terminal unit or 3' terminal unit.

7. (Previously Presented) The process as claimed in claim 1, wherein the oligonucleotide comprises a chain of 5 to 50 nucleotides or a chain of 5 to 50 nucleotides and nucleotide or nucleoside analogs.

8. (Previously Presented) The process as claimed in claim 1, wherein the oligonucleotide consists of a chain of ribonucleotide or deoxyribonucleotide units bonded to one another via phosphodiester bonds and of analogous units of nucleosides bonded to one another via amide bonds, said oligonucleotide comprising at least 5 phosphodiester internucleotide bonds at the end intended to be bonded to the cryptate.

9. (Previously Presented) The process as claimed in claim 1, wherein the rare-earth metal cryptate is bonded covalently to the oligonucleotide either directly or via a spacer arm.

10. (Previously Presented) The process as claimed in claim 1, wherein said rare-earth metal cryptate consists of at least one rare-earth metal salt complexed with a macropolycyclic compound of formula



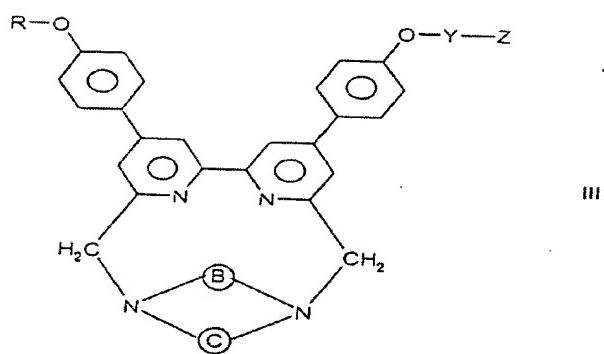
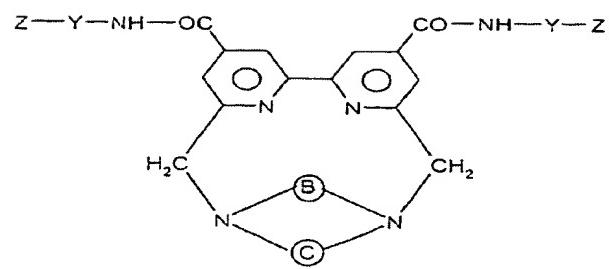
in which Z is an atom with 3 or 4 valencies, R is nothing or represents hydrogen, a hydroxy group, an amino group or a hydrocarbon-based radical, the divalent radicals (A), (B) and (C) are, independently of each other, hydrocarbon-based chains which optionally contain one or more hetero atoms and are

optionally interrupted with a hetero macrocycle, at least one of the radicals (A), (B) and (C), also comprising at least one molecular unit or consisting essentially of a molecular unit, said molecular unit having a triplet energy which is greater than that of the emission level of the complexed rare-earth metal ion.

11. (Previously Presented) The process as claimed in claim 10, wherein the rare-earth metal cryptate consists of a rare-earth metal salt complexed with one of the macrocyclic or macropolycyclic compounds below:

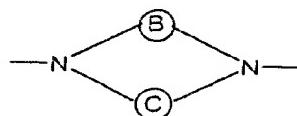
[2.2.phenanthroline]; [2.2.phenanthroline amide]; [2.2.anthracene]; [2.2.anthracene amide]; [2.2.bisoquinoline]; [2.2.biphenyl-bis-pyridine]; [2.2.bipyridine]; [2.2.bipyridine amide]; the macropolycycles trisbipyridine, trisphenanthroline, phenanthrolinebisbipyridine, bisbisoquinolinebisbipyridine, bisbipyridine diphenylbipyridine; a macropolycyclic compound comprising a molecular unit chosen from bipyrazines, bipyrimidines and nitrogen-containing heterocycles comprising N-oxide groups.

12. (Currently Amended) The process according to claim 1, wherein the rare-earth metal cryptate consists of at least one rare-earth metal salt complexed with a macropolycyclic compound corresponding to one of the formulae II or III below:

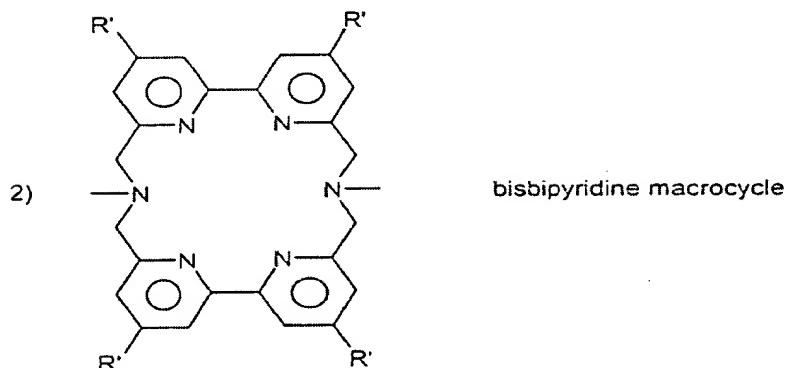
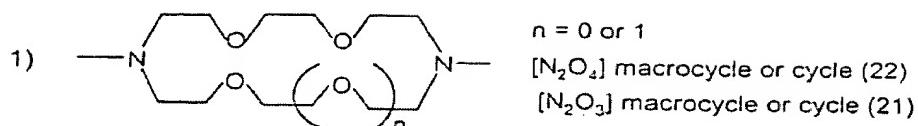


in which:

- the ring of formula



is one of the following rings:



-Y is a spacer group or spacer arm which consists of a divalent organic radical, chosen from linear or branched C₁ or C₂₀ alkylene groups optionally containing one or more double bonds and/or optionally containing one or more hetero atoms such as oxygen, nitrogen, sulfur or phosphorus or one or more carbamoyl or carboxamido group(s); chosen from C₅ to C₈ cycloalkylene groups or chosen from C₆ to C₁₄ arylene groups, said alkylene, cycloalkylene or arylene groups being optionally substituted with alkyl, aryl or sulfonate groups;

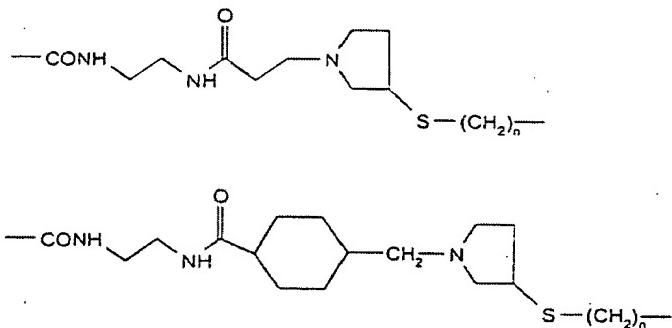
-Z is a functional group capable of bonding covalently to a biological substance;

-R is a methyl group or represents the group -Y-Z;

-R' is hydrogen or a group -COOR" in which R" is a C₁ to C₁₀ alkyl group and preferably represents a methyl, ethyl or tert-butyl group, or alternatively R' is a group -CO-NH-Y-Z.

13. (Previously Presented) The process as claimed in claim 1, wherein the rare-earth metal cryptate is bonded to the oligonucleotide via a spacer arm consisting of a divalent organic radical chosen from C₁-C₂₀ linear or branched alkylene groups optionally containing one or more double bonds or triple bonds and/or optionally containing one or more hetero atoms, such as oxygen, nitrogen, sulfur, phosphorus or one or more carbamoyl or carboxamino group(s); C₅-C₈ cycloalkylene groups and C₆-C₁₄ arylene groups, said alkylene, cycloalkylene or arylene groups being optionally substituted with alkyl, aryl or sulfonate groups.

14. (Previously Presented) The process as claimed in claim 13, wherein the spacer arm is chosen from the groups:



in which n = 2 to 6, and -CONH-(CH₂)₆-, the attachment via the group -CONH taking place on the cryptate.

15. (Previously Presented) The method as claimed in claim 1, wherein the rare-earth metal cryptate is a europium cryptate.

16. (Previously Presented) The process as claimed in claim 15, wherein the rare-earth metal cryptate is the europium cryptate Eu trisbipyridine or Eu [bisdiethoxybipyridine.bipyridine].

17. (Previously Presented) The process as claimed in claim 1, wherein the fluorescent conjugate is used as the only label or as one of the fluorescent labels in the assay.

18. (Canceled)

19. (Previously Presented) The process as claimed in claim 1, wherein, in addition to said fluorescent conjugate, a fluorescent label comprising an acceptor fluorescent compound in the assay.

Please add the following new claims:

--20. (New) A conjugate, comprising:

- (1) a rare-earth metal cryptate;
 - (2) an oligonucleotide; and
 - (3) a biological molecule having a recognition role and which can bind to a partner,
- (1), (2) and (3) being linked by covalent bonds.

21. (New) The conjugate according to claim 20, wherein the biological molecule is one member of a pair molecules capable of binding specifically to one another.

22. (New) The conjugate as claimed in claim 20, wherein the oligonucleotide consists of a chain of ribonucleotide or deoxyribonucleotide units bonded to one another via phosphodiester bonds.

23. (New) The conjugate as claimed in claim 20, wherein the oligonucleotide consists of a chain of ribonucleotide or deoxyribonucleotide units or of analogous units of nucleotides modified on the sugar or on the base and bonded to one another via natural phosphodiester internucleotide bonds, some of the internucleotide bonds optionally being replaced with phosphonate, phosphoramidate or phosphorothioate bonds.

24. (New) The conjugate as claimed in claim 20, wherein the oligonucleotide consists of a chain comprising both ribonucleotide or deoxyribonucleotide units bonded to one another via phosphodiester bonds and analogous units of nucleosides bonded to one another via amide bonds.

25. (New) The conjugate as claimed in claim 20, wherein the oligonucleotide consists of ribonucleotide or deoxyribonucleotide units, one of which may comprise a functional group of NH₂, COOH, CHO, OH, SH, halide, sulfonate, epoxide, or maleimide, introduced onto or generated on said unit, or the functional group introduced using a spacer arm bonded to the terminal phosphate group in the 3' or 5' position.

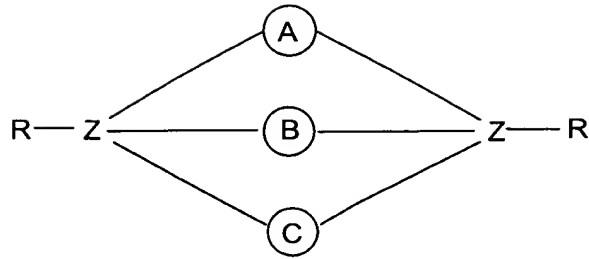
26. (New) The conjugate as claimed in claim 25, wherein said unit is the 5' terminal unit or 3' terminal unit.

27. (New) The conjugate as claimed in claim 20, wherein the oligonucleotide comprises a chain of 5 to 50 nucleotides or a chain of 5 to 50 nucleotides and nucleotide or nucleoside analogs.

28. (New) The conjugate as claimed in claim 20, wherein the oligonucleotide consists of a chain of ribonucleotide or deoxyribonucleotide units bonded to one another via phosphodiester bonds and of analogous units of nucleosides bonded to one another via amide bonds, said oligonucleotide comprising at least 5 phosphodiester internucleotide bonds at the end intended to be bonded to the cryptate.

29. (New) The conjugate as claimed in claim 20, wherein the rare-earth metal cryptate is bonded covalently to the oligonucleotide either directly or via a spacer arm.

30. (New) The conjugate as claimed in claim 20, wherein said rare-earth metal cryptate consists of at least one rare-earth metal salt complexed with a macropolycyclic compound of formula

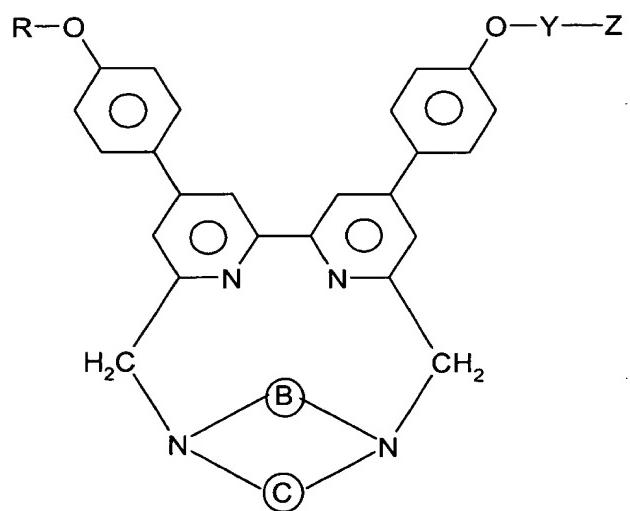
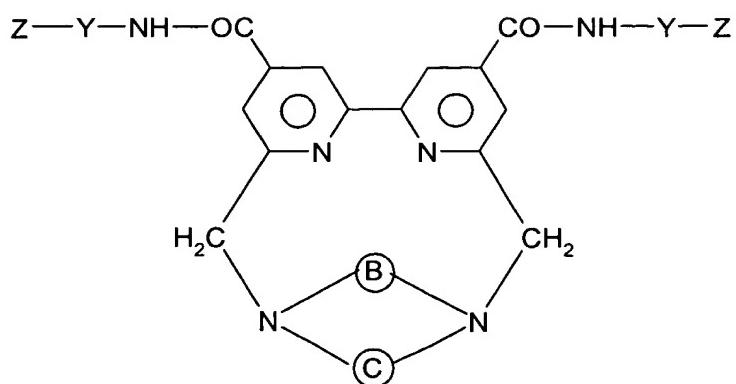


in which Z is an atom with 3 or 4 valencies, R is nothing or represents hydrogen, a hydroxy group, an amino group or a hydrocarbon-based radical, the divalent radicals **(A)**, **(B)** and **(C)**, are, independently of each other, hydrocarbon-based chains which optionally contain one or more hetero atoms and are optionally interrupted with a hetero macrocycle, at least one of the radicals **(A)**, **(B)** and **(C)**, also comprising at least one molecular unit or consisting essentially of a molecular unit, said molecular unit having a triplet energy which is greater than that of the emission level of the complexed rare-earth metal ion.

31. (New) The conjugate as claimed in claim 30, wherein the rare-earth metal cryptate consists of a rare-earth metal salt complexed with the macrocyclic or macropolycyclic compound of:

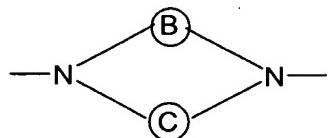
[2.2.phenanthroline]; [2.2.phenanthroline amide]; [2.2.anthracene]; [2.2.anthracene amide]; [2.2.bisisoquinoline]; [2.2.biphenyl-bis-pyridine]; [2.2.bipyridine]; [2.2.bipyridine amide]; a macropolycycle trisbipyridine, trisphenanthroline, phenanthrolinebisbipyridine, bisisoquinolinebisbipyridine, or bisbipyridine diphenylbipyridine; or a macropolycyclic compound comprising a molecular unit of a bipyrazine, a bipyrimidine, or a nitrogen-containing heterocycle comprising an N-oxide group.

32. (New) The conjugate as claimed in claim 20, wherein the rare-earth metal cryptate consists of at least one rare-earth metal salt complexed with a macropolycyclic compound corresponding to one of the formulae II or III below:

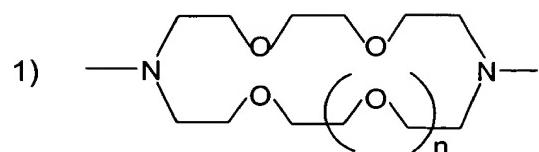


in which:

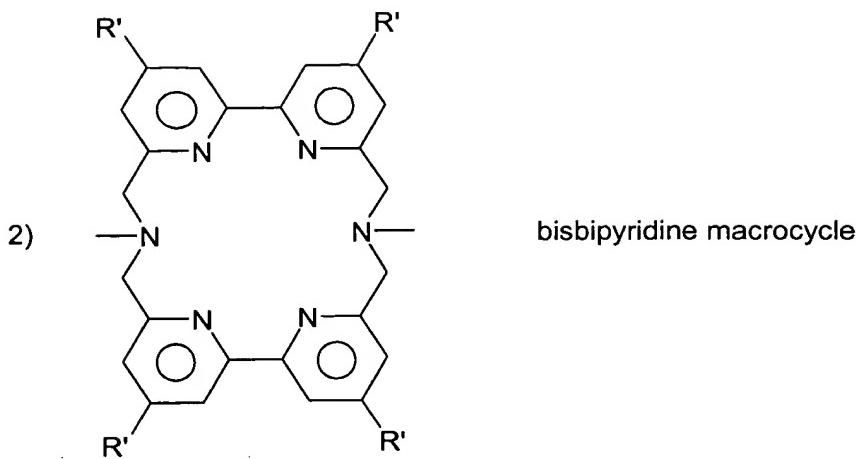
- the ring of formula



is one of the following rings:



$n = 0 \text{ or } 1$
 $[N_2O_4]$ macrocycle or cycle (22)
 $[N_2O_3]$ macrocycle or cycle (21)

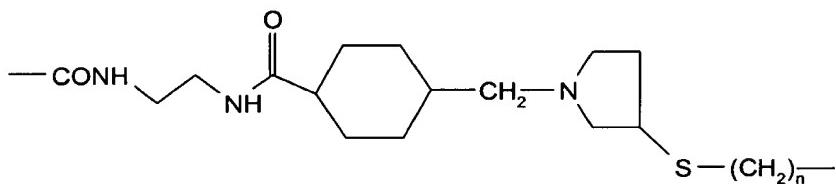
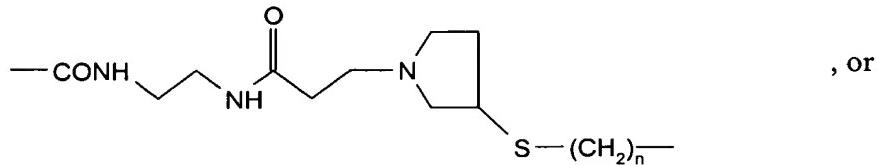


- Y is a spacer group or spacer arm which consists of a divalent organic radical, selected from the group consisting of linear or branched C₁ to C₂₀ alkylene groups optionally containing one or more double bonds and/or optionally containing one or more hetero atoms such as oxygen, nitrogen, sulfur or phosphorus or one or more carbamoyl or carboxamido group(s); C₅ to C₈ cycloalkylene groups; and C₆ to C₁₄ arylene groups, said alkylene, cycloalkylene or arylene groups being optionally substituted with at least one alkyl, aryl or sulfonate group;

- Z is a functional group capable of bonding covalently to a biological substance;
- R is a methyl group or represents the group -Y-Z;
- R' is hydrogen or a group -COOR'' in which R'' is a C₁ to C₁₀ alkyl group, or alternatively R' is a group -CO-NH-Y-Z.

33. (New) The conjugate as claimed in claim 20, wherein the rare-earth metal cryptate is bonded to the oligonucleotide via a spacer arm consisting of a divalent organic radical selected from the group consisting of C₁-C₂₀ linear or branched alkylene groups optionally containing one or more double bonds or triple bonds and/or optionally containing at least one hetero atom, or one or more carbamoyl or carboxamido group(s); C₅-C₈ cycloalkylene groups; and C₆-C₁₄ arylene groups, said alkylene, cycloalkylene or arylene groups being optionally substituted with at least one alkyl, aryl or sulfonate group.

34. (New) The conjugate as claimed in claim 33, wherein the spacer arm:



wherein n = 2 to 6,

or -CONH-(CH₂)₆-, wherein the attachment via the group -CONH taking place on the cryptate.

35. (New) The conjugate as claimed in claim 20, wherein the rare-earth metal cryptate is a europium cryptate.

36. (New) The conjugate as claimed in claim 35, wherein the rare-earth metal cryptate is the europium cryptate Eu trisbipyridine or Eu [bisdiethoxybipyridine.bipyridine].

37. (New) The conjugate as claimed in claim 21, wherein the biological molecule is a cellular receptor, an antigen, an antibody or a nucleic acid.

38. (New) The conjugate as claimed in claim 32, wherein the R" alkyl group is a methyl, ethyl or tert-butyl group.

39. (New) The conjugate as claimed in claim 33, wherein the at least one hetero atom is oxygen, nitrogen, sulfur, or phosphorus.

40. (New) The process according to claim 12, wherein R" is a methyl, an ethyl or a tert-butyl group...